

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

Simplify each rational expression. You must show your work!

Review

1.  $\frac{6x+4}{9x+6}$

2.  $\frac{a^2-4}{a^2-a-2} \div \frac{a^2+6a+8}{a^2+6a+5}$

3.  $\frac{4}{(x+2)^2} \cdot \frac{x^2-3x-10}{8x}$

Add or Subtract.

4.  $\frac{27}{11x} - \frac{5}{11x}$

5.  $\frac{2x+1}{x+5} - \frac{3}{x+5}$

6.  $\frac{14x}{2x+3} + \frac{21}{2x+3}$

7.  $\frac{a}{a^2+3a+2} + \frac{2}{a^2+3a+2}$

8.  $\frac{m}{m^2+3m-18} - \frac{3}{m^2+3m-18}$

$$9. \frac{1}{15y} + \frac{5}{12y}$$

$$10. \frac{3}{8y} + \frac{11}{12y}$$

$$11. \frac{11}{12x} - \frac{1}{18x}$$

$$12. \frac{2x}{x+5} - \frac{x}{x+8}$$

$$13. \frac{-6}{x-3} + \frac{5}{x-2}$$

$$14. \frac{3}{x^2-3x+2} - \frac{3}{x-2}$$

$$15. \frac{x+2}{x^2+9x+20} + \frac{x-1}{x^2+x-12}$$

$$16. \frac{x-3}{2x-1} + \frac{x+5}{2x^2+9x-5}$$

$$17. \frac{4}{x^2-25} - \frac{4}{x^2+10x+25}$$

$$18. \frac{6}{4y+8} - \frac{6}{y^2+2y}$$

$$19. \frac{4}{y^2+8y+15} - \frac{y}{y^2+9y+18}$$

$$20. \frac{4}{4x^2+13x+3} + \frac{x}{x^2+6x+9}$$

$$21. \frac{m}{m^2-2m-8} + \frac{3}{m^2-m-6}$$

$$22. \frac{m}{m^2-5m+6} + \frac{3}{m^2+m-12}$$

$$23. \frac{4}{x^2-x} + \frac{6}{x^2-4x+3}$$

$$24. \frac{3}{x^2+3x} - \frac{1}{x} - \frac{6}{x^2-9}$$

$$25. \frac{t}{2t-3} - 11$$

$$26. \frac{5}{x^2+x-6} - \frac{2}{x-2} + \frac{4}{x^2-4}$$

Solve. (Hint: Set each quadratic equation equal to zero, then factor to solve!)

$$27. x + 5 + x - 7 = 10 \text{ (not quadratic)}$$

$$28. x^2 + 5x = 14$$

$$29. x^2 + 10 = 7x$$

$$30. x^2 - 6x + 7 = 0$$